January 2017


# Wildlife Health Laboratory

## Brucellosis Surveillance

Brucellosis surveillance of hunter harvested elk is almost complete as many of the elk seasons are closed, or will at the end of January. Since the beginning of the season, 1,253 blood samples have been received, with 911 of those (73%) being suitable for testing. Positive samples this year have come from elk hunt areas 40, 49, 51, 54, 56, 58, 59, 61, 62, 63, 64, 66, and 67.

The majority of this year's brucellosis surveillance occurred in the Bighorn Mountains where we have intensively monitor harvested elk for this disease for the past four years. As of the end of December, 699 blood samples have been received from the all of the Bighorn elk herd units; from which 476 (68%) have been suitable for testing and were collected from either yearling or adult elk. See table below for elk hunt areas within the Bighorns and their corresponding sample totals to date; totals include male and females, but only adult and yearling animals (no juveniles). Elk hunt area 49 is a new brucellosis positive hunt area for 2016.

| Hunt Area | Total Received | Total Useable | Total Negative | Total Positive |
|---|---|---|---|---|
| 33 | 15 | 8 | 8 | 0 |
| 34 | 50 | 39 | 39 | 0 |
| 35 | 21 | 13 | 13 | 0 |
| 36 | 17 | 10 | 10 | 0 |
| 37 | 19 | 16 | 16 | 0 |
| 38 | 114 | 84 | 84 | 0 |
| 39 | 39 | 32 | 32 | 0 |
| 40 | 57 | 38 | 37 | 1 |
| 41 | 120 | 82 | 82 | 0 |
| 45 | 87 | 47 | 47 | 0 |
| 47 | 7 | 6 | 6 | 0 |
| 48 | 38 | 22 | 22 | 0 |
| 49 | 75 | 51 | 51 | 1 |
| 120 | 40 | 28 | 28 | 0 |
| **Total** | **699** | **476** | **474** | **2** |

## CWD Surveillance

Surveillance for CWD in the state's deer, elk, and moose populations is also nearing completion. So far this hunting season over 3,169 CWD samples have been submitted to the laboratory, of those 2,771 were from hunter-killed animals (113 positives) 136 from targeted animals (animals showing signs of CWD, and 20 of those were positive), and 262 from road-killed animals (3 positives). Nine new deer hunt areas have been identified in 2016: 7, 17, 92, 110, 111, 113, 121, 128, and 145.

### Veterinary Services Staff

**Branch Supervisor/Wildlife Veterinarian:** Dr. Mary Wood

**Laboratory Supervisor**: Hank Edwards

**Senior Lab Scientist:** Hally Killion

**Senior Lab Scientist:** Jessica Jennings-Gaines

**Brucellosis Lab Assistant:** Kylie Sinclair

**CWD Lab Assistant** Paige Hellbaum

**Wildlife Disease Specialist**: Terry Creekmore

**TWRC Supervisor**: Matt Huizenga

**Wildlife Biologist**: Cole Hansen

**Biologist:** Sam Lockwood

## Finally – The end of Fencing!!!

Happy Holidays from the Canyon! Although the three of us took a number of days off this month to spend with family and friends, we were still able to make a push and get the east pasture of the facility wrapped up before winter really set in. We also replaced/fixed parts of the elk alleyway and old sheep pens to improve footing for elk in the alleyway and to fix some drainage problems we have battled in the past.

*Completed fence in our east pasture.*

## New Projects in the Works

Loren Woodin, Todd Grosskopf, and Jerry Cowles came out to look at some future projects at the TWRC. Their perspective and input were very helpful so we could get started designing, ordering materials, and scheduling times when they can come out with their large equipment. Two of the projects that we are planning are: rebuilding an irrigation diversion to get water to some of our pastures/meadows and replacing our bridge across Sybille Creek. These are big projects that we cannot complete with our skills and equipment, so we are very grateful for the help of habitat and access and our engineer!

## Freezing Temperatures, Freezing Pipes!

It seems that no matter how long you live in the Cowboy State, winter always seems to come out of nowhere and catch you by surprise. Earlier in December, furnaces that were just installed over the last few years decided to malfunction in our necropsy lab and bunk house causing water lines to freeze in both buildings and burst in the lab. Fortunately most of the lines that burst were exposed and easy to get to, so we were able to get everything repaired quickly and back up and running again!

*Updated elk alley and pen fencing. Significant water drainage had caused the ground to erode over time in this area, leading to uneven footing for elk running through the alleyway and water buildup in the adjoining sheep pen. Now the ground is even and drainage has been routed away from the sheep pen.*

# Wildlife Necropsy Summary

**Six diagnostic cases were submitted in December.**

| Species | Date Received | County | Diagnosis |
|---|---|---|---|
| Antelope | 12/1/2016 | Sublette | Fibrinous pleuritis |
| Bighorn sheep | 12/8/2016 | Albany | Trauma |
| Mule Deer | 12/9/2016 | Lincoln | Pending |
| Mule Deer | 12/14/2016 | Fremont | Undetermined |
| Elk | 12/16/2016 | Sheridan | Hydatid cyst |
| Mule Deer | 12/19/2016 | Uinta | Pending |

## Wildlife Disease of the Month— *Echinococcus granulosus* (Hydatid Disease)

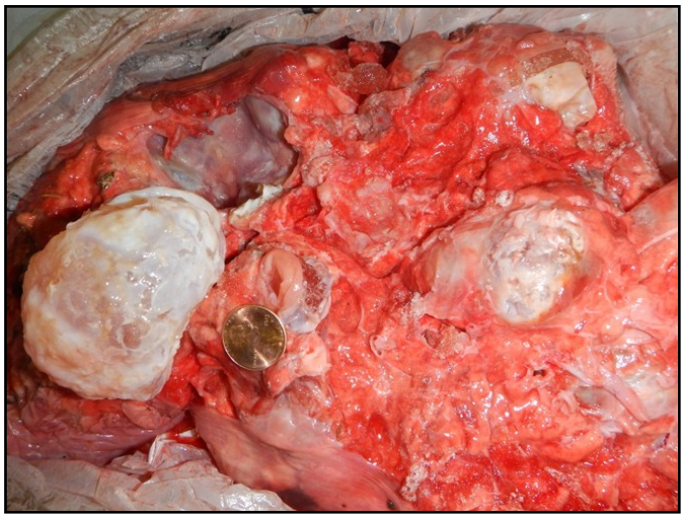
*Echinococcus granulosus* is a parasitic tapeworm that requires two hosts to complete its life cycle. Ungulates (deer, elk, moose, domestic sheep, and domestic cattle) are intermediate hosts for larval tapeworms. Canids (dogs, wolves, coyotes, foxes) are definitive hosts where larval tapeworms mature and live in the small intestine. Canids are exposed to larval tapeworms by ingesting cysts from infected ungulates. Adult tapeworms, 3-5 mm long, produce eggs which Canids pass in their feces. Intermediate hosts ingest the eggs while grazing, where the eggs hatch and develop into larvae. The infected ungulate host develops thick-walled fluid-filled cysts ranging in size from 2 to 30 cm in diameter (see below). These cysts are typically found in the lungs but occasionally are seen in the liver. Cysts are easily seen or felt in the lungs of infected cervids and animals with a large number of cysts may experience decreased stamina and increased likelihood of predation.

*Echinococcus granulosus* has a worldwide distribution with two recognized biotypes. The northern biotype above 45˚ latitude circulates between Canids (wolf, coyote, dog) and cervids (moose, elk, deer, caribou, reindeer). This is thought to be the biotype seen in Wyoming wildlife and does not typically infect domestic livestock. The southern or domestic biotype circulates between dogs and domestic ungulates, especially sheep. It is endemic in most sheep raising areas of the world.

Humans are not a natural host for the parasite they but can be infected by ingesting eggs which are passed with the feces from an infected canine. These can be ingested after handling contaminated soil or contaminated canid scat or fur and then touching the face or eating before washing hands. Humans cannot be infected by ingesting larval tapeworms from ungulates. Where the parasite is found in wild canids and wild ungulates, most public health agencies consider the public health risk to be very low.

Regular deworming of domestic dogs and good hygienic practices by humans are the best methods to prevent infection in humans. Always wash your hands after handling a dog that has access to ungulate carcasses. When outdoors, avoid touching or disturbing scat. Do not feed uncooked meat or organs of deer, elk, moose or sheep to dogs. If your dog has had access to ungulate carcasses, consult your veterinarian for proper deworming protocols.

*Echinococcus granulosus* cyst in the lungs of an elk.



Excised *Echinococcus granulosus* cyst from the lungs of an elk.